

**PUBLIC SAFETY DEPARTMENT[661]**

**Adopted and Filed**

Pursuant to the authority of Iowa Code section 103.6, the Electrical Examining Board hereby amends Chapter 504, "Standards for Electrical Work," Iowa Administrative Code.

The Electrical Examining Board is authorized to adopt administrative rules for the licensing of electricians and electrical contractors and for the state electrical inspection program. This amendment adopts the 2017 edition of the National Electrical Code (NEC), with specified exceptions. The 2017 edition of the NEC reflects current industry standards, and adoption of the current NEC helps to promote consistency in the regulations affecting electricians and electrical contractors.

Revisions in the 2017 edition of the NEC reflect changes in communication and energy demands in industrial, business and consumer contexts. Business and industry and consumers increasingly rely on Internet services and communications devices, which has increased energy demands and driven technological innovation. The revisions in the 2017 edition of the NEC reflect modifications in the industry related to energy efficiency, energy production, residential uses, and special needs for health care facilities, and offer better protection for people and their property as the demands on electrical service increase.

These types of changes are particularly relevant in Iowa. The economic recovery in Iowa has outpaced other states and remains strong. Iowa will benefit from having the most recent version of the NEC. Demands for electrical work are likely to continue to rise, and Iowa can maintain a competitive edge with other states by updating its standards to meet the current industry expectations and to provide better protection and safety for individuals and property. Most of the states which border Iowa have adopted or are in the process of adopting the 2017 edition of the NEC. Minnesota and South Dakota have adopted the 2017 NEC with an effective date of July 1, 2017; Nebraska adopted the 2017 NEC with an effective date of August 1, 2017; and Wisconsin is in the process of adopting the 2017 NEC, and the effective date of the adoption has not been established.

Prior to the filing of the Notice of Intended Action, the Electrical Examining Board sought input and comments from stakeholders. Comments were received from many stakeholders, including the Iowa Association of Building Officials, the National Electrical Contractors Association, the Associated Builders and Contractors of Iowa, the Home Builders Association, Joint Apprenticeship Training Centers, and a local union, as well as from members of the public and members of the Board. The comments received were considered in drafting this amendment to the rule.

Notice of Intended Action was published in the Iowa Administrative Bulletin as **ARC 3153C** on July 5, 2017. A public hearing was held on August 17, 2017.

Comments were received from members of the public at the hearing. Tim McClintock, Regional Electrical Code Specialist for the National Fire Protective Association (NFPA) spoke in support of the adoption of the 2017 NEC. He said that the 2017 NEC provides up-to-date standards for on-site generation and distribution. McClintock also submitted written comments in support of the adoption of the 2017 NEC. His comments supported the adoption of the 2017 NEC because of the importance of electrical safety. He noted that recent editions of the NEC have included installation requirements to meet the needs of a dramatically changing electrical generation and distribution network. According to McClintock, solar, wind, fuel cell and other localized generation sources are being interconnected with or without an electrical utility source to provide reliable supply from renewable sources. Requirements in the 2017 NEC cover expanded use of direct current power derived from on-site generation. With the advancement of technology, it is important that standards be kept up to date in order to have safe implementation for the new technology and to ensure that end users can take advantage of this new technology without endangering themselves or their property. Adopting current standards also promotes the use of new technology, which will have immeasurable societal benefits at both a micro- and macroeconomic perspective.

Don Iverson, Midwest Field Representative for the National Electrical Manufacturers Association (NEMA) spoke in support of the adoption of the 2017 NEC. He said that the adoption of the 2017 NEC allows for the proper installation of new technologies, including large-scale photovoltaic (PV) systems and direct current microgrids. Iverson also submitted written comments on behalf of NEMA. Iverson's written comments added that NEMA is the trade association of choice for the electrical equipment and medical imaging manufacturing industry, with approximately 400 member companies. These companies manufacture products used in the generation, transmission, distribution, control, and end use of electricity. NEMA supports the adoption of the 2017 NEC because that is the best way to ensure a uniform and up-to-date standard of safety for all occupants in the built environment, and means safer and more economically prosperous communities. The written comments stated that the 2017 NEC focuses on the proper installation of electrical systems and equipment to protect people and property from the use of electricity in the built environment and that through the adoption of the 2017 NEC, businesses will be able to take advantage of lower infrastructure and start-up and operational costs through new and improved technology, such as large-scale PV systems and direct-current microgrids, which are becoming popular and are a means to increase energy efficiency, reduce costs, and maintain critical business continuity.

Jonathan Lam, Business Development Manager for Square D by Schneider Electric of Cedar Rapids, Iowa, submitted written comments in support of the 2017 NEC. Specifically, Square D by Schneider Electric supports the adoption of the 2017 NEC and would encourage the Electrical Examining Board to also adopt the 2017 NEC requirements for arc fault circuit interrupters (AFCI), which the Electrical Examining Board has not included in the adoption of the 2017 NEC. The comments submitted on behalf of Square D by Schneider Electric stated that, according to the latest NFPA research on home fires, electrical failures or malfunctions were factors in one of every eight reported home fires and one in every five home fire deaths and that almost half (47 percent) of the fires started by electrical failures or malfunctions in 2007-2011 involved some type of electrical distribution or lighting equipment as a source of ignition. The comments stated that the Square D facility in Cedar Rapids has designed, tested, and made circuit breakers since 1955 and that AFCIs have proven to be reliable and effective in preventing electrical fires. Square D supports the adoption of the 2017 NEC and keeping the AFCI requirements in place to ensure that homes in Iowa will be built with the best electrical protection.

The Electrical Examining Board considered the comments received and determined that no changes would be made from the amendments published under Notice.

Pursuant to the provisions of rule 661—10.222(17A), the Board does not have authority to waive requirements established by statute. Pursuant to the provisions of rule 661—501.5(103), the Board has the authority to grant waivers from the rules.

The Electrical Examining Board adopted these amendments on October 19, 2017.

It is expected that there will be a positive impact on jobs. The adoption of the 2017 edition of the NEC will lessen the burden for electricians entering into Iowa's job market, simplify the examination process and enable Iowa electricians to compete for business in other states.

This amendment is intended to implement Iowa Code section 103.6.

This amendment will become effective on December 27, 2017.

The following amendment is adopted.

Amend rule 661—504.1(103) as follows:

**661—504.1(103) Installation requirements.** The provisions of the National Electrical Code, 2014 2017 edition, published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, are adopted as the requirements for electrical installations performed by persons licensed pursuant to 661—Chapters 500 through 503 and to installations subject to inspection pursuant to Iowa Code chapter 103 with the following amendments:

**504.1(1)** ~~Add the following exceptions to section 210.8, paragraph (A), subparagraph (2):~~

~~a.—Exception No. 1 to (2): Receptacles that are not readily accessible.~~

~~b.—Exception No. 2 to (2): A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with 400.7(A)(6), (A)(7), or (A)(8).~~

~~c.—Receptacles installed under the exceptions to 210.8(A)(2) shall not be considered as meeting the requirements of 210.52(G).~~

~~Delete section 210.12(D).~~

**504.1(2)** Add the following exceptions to section 210.8, paragraph (A), subparagraph (5):

~~a.—Exception No. 2 to (5): Receptacles that are not readily accessible.~~

~~b.—Exception No. 3 to (5): A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with 400.7(A)(6), (A)(7), or (A)(8).~~

~~c.—Receptacles installed under the exceptions to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G).~~

~~Delete section 406.4(D)(4).~~

**504.1(3)** ~~Delete section 210.12(B).~~

**504.1(4)** Delete the exception to section 220.12 and insert in lieu thereof the following exception:

EXCEPTION: Where the building is designed and constructed to comply with an energy code adopted by the local authority, the lighting load shall be permitted to be calculated at the values specified in the energy code.

**504.1(5)** ~~Delete section 406.4(D)(4).~~

This rule is intended to implement Iowa Code chapter 103.

[Filed 10/23/17, effective 12/27/17]

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EDITOR'S NOTE: For replacement pages for IAC, see IAC Supplement 11/22/17.